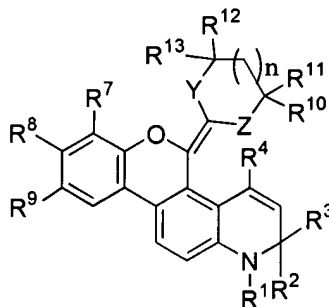


What is claimed is:

1. A compound of the formula:



(I)

5 wherein:

R^1 is selected from the group of hydrogen, C_1-C_4 alkyl, C_1-C_4 haloalkyl, C_1-C_4 heteroalkyl, COR^5 , CO_2R^5 , SO_2R^5 , and $CONR^5R^6$;

R^2 and R^3 each independently is selected from the group of hydrogen, C_1-C_6 alkyl, and C_1-C_6 haloalkyl; or

10 R^2 and R^3 taken together form a cycloalkyl ring of from three to twelve carbons;

R^4 is selected from the group of hydrogen, F, Cl, Br, CN, OR^5 , C_1-C_4 alkyl, C_1-C_4 haloalkyl, and C_1-C_4 heteroalkyl;

15 R^5 and R^6 each is independently selected from the group of hydrogen, C_1-C_4 alkyl, C_1-C_4 heteroalkyl, and C_1-C_4 haloalkyl;

R⁷ through R⁹ each independently is selected from the group of hydrogen, F, Cl, Br, I, NO₂, CN, OR⁵, NR⁵R⁶, SR⁵, COR⁵, CO₂R⁵, CONR⁵R⁶, C₁–C₈ alkyl, C₁–C₈ heteroalkyl, C₁–C₈ haloalkyl, C₂–C₈ alkenyl, C₂–C₈ alkynyl;

R¹⁰ through R¹⁵ each independently is selected from the group of hydrogen,
5 F, Cl, Br, OR⁵, C₁–C₄ alkyl, C₁–C₄ haloalkyl, and C₁–C₄ heteroalkyl; or

R¹² and R¹⁴ taken together form a bond, when Y is CR¹⁴R¹⁵; or

R¹⁰ and R¹⁴ taken together form a bond, when Z is CR¹⁴R¹⁵;

Y and Z each independently is selected from the group of O, S, NR⁶ and
CR¹⁴R¹⁵;

10 n is 0, 1, 2, or 3;

or a pharmaceutically acceptable salt or prodrug thereof.

2. A compound according to claim 1, wherein

R¹ is selected from the group of hydrogen, C₁–C₄ alkyl, COR⁵, CO₂R⁵, and
SO₂R⁵;

15 R² and R³ each independently is selected from the group of C₁–C₄ alkyl;

R⁴ is selected from the group of hydrogen, F, Cl, Br, C₁–C₄ alkyl, and C₁–C₄
haloalkyl;

R^5 and R^6 each is independently selected from the group of hydrogen, and C_1-C_4 alkyl;

R^7 through R^9 each independently is selected from the group of hydrogen, F, Cl, Br, CN, OR^5 , C_1-C_8 alkyl, C_1-C_8 heteroalkyl, and C_1-C_8 haloalkyl;

5 R^{10} through R^{15} each independently is selected from the group of hydrogen, F, Cl, OR^5 , C_1-C_4 alkyl, and C_1-C_4 haloalkyl; or

R^{12} and R^{14} taken together form a bond, when Y is $CR^{14}R^{15}$; or

R^{10} and R^{14} taken together form a bond, when Z is $CR^{14}R^{15}$;

Y and Z each independently is selected from the group of S, and $CR^{14}R^{15}$;

10 and n is 0, 1, or 2.

3. A compound according to claim 2, wherein

R^1 is hydrogen;

R^2 and R^3 is CH_3 ;

R^4 is selected from the group of F, Cl, Br, CH_3 , and CF_3 ;

15 R^7 is hydrogen or F;

R^8 is selected from the group of H, CH_3 , OH, and OCH_3 ;

R^9 is selected from the group of hydrogen, F, Cl, Br, CN, OCH_3 , CH_3 , and CF_3 ;

R^{10} , R^{11} , R^{13} , R^{15} each independently is selected from the group of hydrogen, F, Cl, CH_3 , and CF_3 ; and

R^{12} and R^{14} taken together form a bond, when Y is $CR^{14}R^{15}$.

4. A compound according to claim 1, wherein said compound is
5 selected from the group of:

9-Fluoro-5-(1,3-dithia-2-cyclohexylidene)-1,2-dihydro-2,2,4-trimethyl-5*H*-chromeno[3,4-*f*]quinoline (compound **10**);

8-methoxy-5-(1,3-dithia-2-cyclohexylidene)-1,2-dihydro-2,2,4-trimethyl-5*H*-chromeno[3,4-*f*]quinoline (compound **13**);

- 10 7,9-difluoro-5-(1,3-dithia-2-cyclohexylidene)-1,2-dihydro-2,2,4-trimethyl-5*H*-chromeno[3,4-*f*]quinoline (compound **15**);

7-fluoro-5-(1,3-dithia-2-cyclohexylidene)-1,2-dihydro-2,2,4-trimethyl-5*H*-chromeno[3,4-*f*]quinoline (compound **17**);

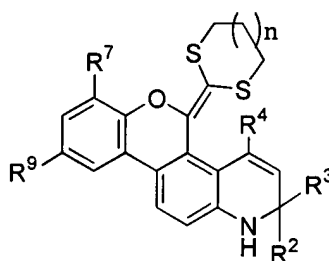
- 15 7-fluoro-5-cyclohexylidene-1,2-dihydro-2,2,4-trimethyl-5*H*-chromeno[3,4-*f*]quinoline (compound **19**);

7,9-difluoro-5-cyclohexylidene-1,2-dihydro-2,2,4-trimethyl-5*H*-chromeno[3,4-*f*]quinoline (compound **20**);

7-fluoro-5-(1,3-dithia-2-cyclohexylidene)-1,2-dihydro-2,2-dimethyl-5*H*-chromeno[3,4-*f*]quinoline (compound **21**); and

7-fluoro-5-(2-cyclohexenyldiene)-1,2-dihydro-2,2,4-trimethyl-5*H*-
chromeno[3,4-*f*]quinoline (compound **23**).

5. A compound of the formula:



(II)

wherein:

R^2 and R^3 each independently is selected from the group of C_1 – C_4 alkyl, and
 C_1 – C_4 haloalkyl;

R^4 is selected from the group of hydrogen, F, Cl, Br, CN, OR^5 , C_1 – C_4 alkyl,
10 C_1 – C_4 haloalkyl, and C_1 – C_4 heteroalkyl;

R^5 and R^6 each is independently selected from the group of hydrogen, C_1 – C_4
alkyl, C_1 – C_4 heteroalkyl, and C_1 – C_4 haloalkyl;

R^7 through R^9 each independently is selected from the group of hydrogen, F,
Cl, Br, CN, OR^5 , NR^5R^6 , SR^5 , COR^5 , C_1 – C_4 alkyl, C_1 – C_4 heteroalkyl, C_1 – C_4
15 haloalkyl, C_2 – C_4 alkenyl;

n is 0, 1, 2, or 3;

or a pharmaceutically acceptable salt or prodrug thereof.

6. A compound according to claim 5, wherein

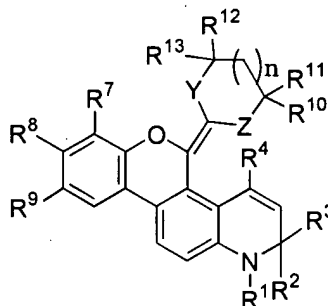
R^2 and R^3 is CH_3 ;

R^4 is selected from the group of F, Cl, Br, CH_3 , and CF_3 ;

R^7 is hydrogen or F;

5 R^9 is selected from the group of hydrogen, F, Cl, Br, CN, OCH_3 , CH_3 , and CF_3 .

7. A pharmaceutical composition comprising a pharmaceutically acceptable carrier and a compound of formula:



10 (I)
wherein:

R^1 is selected from the group of hydrogen, C_1-C_4 alkyl, C_1-C_4 haloalkyl, C_1-C_4 heteroalkyl, COR^5 , CO_2R^5 , SO_2R^5 , and $CONR^5R^6$;

R^2 and R^3 each independently is selected from the group of hydrogen, C_1-C_6
15 alkyl, and C_1-C_6 haloalkyl; or

R^2 and R^3 taken together form a cycloalkyl ring of from three to twelve carbons;

R^4 is selected from the group of hydrogen, F, Cl, Br, CN, OR^5 , C_1-C_4 alkyl, C_1-C_4 haloalkyl, and C_1-C_4 heteroalkyl;

5 R^5 and R^6 each is independently selected from the group of hydrogen, C_1-C_4 alkyl, C_1-C_4 heteroalkyl, and C_1-C_4 haloalkyl;

R^7 through R^9 each independently is selected from the group of hydrogen, F, Cl, Br, I, NO_2 , CN, OR^5 , NR^5R^6 , SR^5 , COR^5 , CO_2R^5 , $CONR^5R^6$, C_1-C_8 alkyl, C_1-C_8 heteroalkyl, C_1-C_8 haloalkyl, C_2-C_8 alkenyl, C_2-C_8 alkynyl;

10 R^{10} through R^{15} each independently is selected from the group of hydrogen, F, Cl, Br, OR^5 , C_1-C_4 alkyl, C_1-C_4 haloalkyl, and C_1-C_4 heteroalkyl; or

R^{12} and R^{14} taken together form a bond, when Y is $CR^{14}R^{15}$; or

R^{10} and R^{14} taken together form a bond, when Z is $CR^{14}R^{15}$;

Y and Z each independently is selected from the group of O, S, NR^6 and
15 $CR^{14}R^{15}$;

n is 0, 1, 2, or 3;

or a pharmaceutically acceptable salt or prodrug thereof.

8. A pharmaceutical composition according to claim 7, wherein:

R^1 is selected from the group of hydrogen, C_1-C_4 alkyl, COR^5 , CO_2R^5 , and SO_2R^5 ;

R^2 and R^3 each independently is selected from the group of C_1-C_4 alkyl;

5 R^4 is selected from the group of hydrogen, F, Cl, Br, C_1-C_4 alkyl, and C_1-C_4 haloalkyl;

R^5 and R^6 each is independently selected from the group of hydrogen, and C_1-C_4 alkyl;

R^7 through R^9 each independently is selected from the group of hydrogen, F,
10 Cl, Br, CN, OR^5 , C_1-C_8 alkyl, C_1-C_8 heteroalkyl, and C_1-C_8 haloalkyl;

R^{10} through R^{15} each independently is selected from the group of hydrogen, F, Cl, OR^5 , C_1-C_4 alkyl, C_1-C_4 haloalkyl; or

R^{12} and R^{14} taken together form a bond, when Y is $CR^{14}R^{15}$; or

R^{10} and R^{14} taken together form a bond, when Z is $CR^{14}R^{15}$;

15 Y and Z each independently is selected from the group of S, and $CR^{14}R^{15}$;

n is 0, 1, or 2.

9. A pharmaceutical composition according to claim 8, wherein:

R^1 is hydrogen;

R^2 and R^3 is CH_3 ;

R^4 is selected from the group of F, Cl, Br, CH_3 , and CF_3 ;

R^7 is hydrogen or F;

R^8 is selected from the group of H, CH_3 , OH, and OCH_3 ;

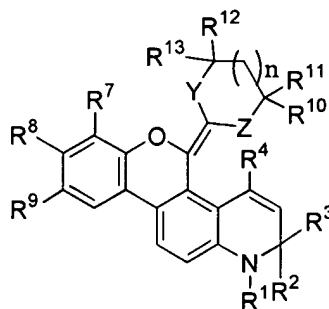
5 R^9 is selected from the group of hydrogen, F, Cl, Br, CN, OCH_3 , CH_3 , and CF_3 ;

R^{10} , R^{11} , R^{13} , R^{15} each independently is selected from the group of hydrogen, F, Cl, CH_3 , and CF_3 ; and

R^{12} and R^{14} taken together form a bond, when Y is $CR^{14}R^{15}$.

10 10. A method of treating an individual having a condition mediated by a progesterone receptor comprising administering to said individual a pharmaceutically effective amount of a compound according to any one of claims 1, 4 and 5.

15 11. A method of treating an individual having a condition mediated by a progesterone receptor comprising administering to said individual a pharmaceutically effective amount of a compound represented by formula (I):



(I)

wherein:

R^1 is selected from the group of hydrogen, C_1 – C_4 alkyl, C_1 – C_4 haloalkyl, C_1 –
5 C_4 heteroalkyl, COR^5 , CO_2R^5 , SO_2R^5 , and $CONR^5R^6$;

R^2 and R^3 each independently is selected from the group of hydrogen, C_1 – C_6
alkyl, and C_1 – C_6 haloalkyl; or

R^2 and R^3 taken together form a cycloalkyl ring of from three to twelve
carbons;

10 R^4 is selected from the group of hydrogen, F, Cl, Br, CN, OR^5 , C_1 – C_4 alkyl,
 C_1 – C_4 haloalkyl, and C_1 – C_4 heteroalkyl;

R^5 and R^6 each is independently selected from the group of hydrogen, C_1 – C_4
alkyl, C_1 – C_4 heteroalkyl, and C_1 – C_4 haloalkyl;

R^7 through R^9 each independently is selected from the group of hydrogen, F,
15 Cl, Br, I, NO_2 , CN, OR^5 , NR^5R^6 , SR^5 , COR^5 , CO_2R^5 , $CONR^5R^6$, C_1 – C_8 alkyl, C_1 – C_8
heteroalkyl, C_1 – C_8 haloalkyl, C_2 – C_8 alkenyl, C_2 – C_8 alkynyl;

R^{10} through R^{15} each independently is selected from the group of hydrogen, F, Cl, Br, OR^5 , C_1-C_4 alkyl, C_1-C_4 haloalkyl, and C_1-C_4 heteroalkyl; or

R^{12} and R^{14} taken together form a bond, when Y is $CR^{14}R^{15}$; or

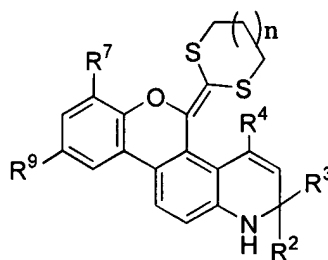
R^{10} and R^{14} taken together form a bond, when Z is $CR^{14}R^{15}$;

5 Y and Z each independently is selected from the group of O, S, NR^6 and $CR^{14}R^{15}$;

n is 0, 1, 2, or 3;

or a pharmaceutically acceptable salt or prodrug thereof.

12. A method of treating an individual having a condition mediated by a
10 progesterone receptor comprising administering to said individual a pharmaceutically effective amount of a compound represented by formula (II):



(II)

wherein:

15 R^2 and R^3 each independently is selected from the group of C_1-C_4 alkyl, and C_1-C_4 haloalkyl;

R^4 is selected from the group of hydrogen, F, Cl, Br, CN, OR^5 , C_1-C_4 alkyl, C_1-C_4 haloalkyl, and C_1-C_4 heteroalkyl;

R^5 and R^6 each is independently selected from the group of hydrogen, C_1-C_4 alkyl, C_1-C_4 heteroalkyl, and C_1-C_4 haloalkyl;

5 R^7 through R^9 each independently is selected from the group of hydrogen, F, Cl, Br, CN, OR^5 , NR^5R^6 , SR^5 , COR^5 , C_1-C_4 alkyl, C_1-C_4 heteroalkyl, C_1-C_4 haloalkyl, C_2-C_4 alkenyl;

n is 0, 1, 2, or 3;

or a pharmaceutically acceptable salt or prodrug thereof.

10 13. A method according to claim 10, wherein said condition is selected from the group of dysfunctional uterine bleeding, dysmenorrhea, endometriosis, leiomyomas (uterine fibroids), hot flushes, mood disorders, meningiomas, hormone-dependent cancers and female osteoporosis.

15 14. A method according to claim 10, wherein said condition is alleviated with female hormone replacement therapy.

15 15. A method of modulating the fertility of an individual comprising administering to said individual a pharmaceutically effective amount of a compound according to any one of claims 1, 4, and 5.

16. A method of modulating a progesterone receptor in an individual comprising administering to said individual a compound according to any one of claims 1, 4, and 5 in an amount effective to modulate a progesterone receptor.

17. A method according to claim 16, wherein said modulation is
5 activation.

18. A method according to claim 17, wherein said compound provides at least 50% maximal activation of progesterone receptor at a drug concentration of less than 100 nM.

19. A method according to claim 17, wherein said compound provides at
10 least 50% maximal activation of progesterone receptor at a drug concentration of less than 50 nM.

20. A method according to claim 17, wherein said compound provides at least 50% maximal activation of progesterone receptor at a drug concentration of less than 20 nM.

15 21. A method according to claim 17, wherein said compound provides at least 50% maximal activation of progesterone receptor at a drug concentration of less than 10 nM.

22. A method of treating an individual having cancer comprising administering to said individual a pharmaceutically effective amount of a compound
20 according to any one of claims 1, 4 and 5.

23. A method according to claim 22, wherein said cancer is ovarian cancer, breast cancer, endometrial cancer or prostate cancer.
24. A method of determining the presence of a progesterone receptor (PR) in a cell or cell extract comprising (a) labeling a compound according to any
5 one of claims 1, 4 or 5; (b) contacting the cell or cell extract with said labeled compound; and (c) testing the contracted cell or cell extract to determine the presence of progesterone receptor.